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.0016'-.0003'; sporidia biseriata, yellowish, elliptical, 2-3-nucleate, with a faint apiculus at each end, .00035'-.0004'x.000175'. Grows only on the root and basal portion of the stem.

On decaying stems of *Erigeron Canadense* lying on the ground, Aug.

ASTERINA RAMULARIS.—Perithecia subcuticular, orbicular, .0008'-.001' in diameter, or subelongated, scattered or subconfluent, with a very scanty mycelium; margin of a distinct radiate-cellular structure; asci oblong, spore-bearing portion .002'x.001', stipitate at first, stipe at length absorbed; sporidia 8, crowded, elliptical, coarsely granular, with 1-2 large vacuoles at first, about .0006'x.0004'.

Perithecia permanently covered by the epidermis, which is blackened above them.

On dead twigs of *Lindera Benzoin*, West Chester, Pa., Oct. 1881, Haines, Everhart, Jefferis and Gray, No. 326.

NECTRIA SQUAMULOSA.—Gregarious, minute, .004' in diameter, ovato-globose, covered, excepting the brownish, obtuse, slightly prominent ostiolum, with a light-colored, squamulose coat; asci lanceolate, narrowed and subtruneate above, .0013'x.00025'; sporidia biseriata, clavate or cylindric-oblong, .0002'-.0003' long by rather less than .0001' wide, binucleate, probably becoming uniseptate.

On decaying wood of a fallen limb, No. 81.

CERATOSTOMA CAPILLARE.—Perithecia capillary, nodulose, with short, spreading, hyaline hairs below, scarcely enlarged at base; asci elliptical, .0013'x.00035'; sporidia 8, crowded, fusiform, nearly hyaline, indistinctly nucleate, straight or slightly curved, .00045'-.00055'x.000125'.

On decaying sterile catkins of *Alnus serrulata*, June.

DINEMASPORIUM CRUCIFERUM.—Minute; marginal fringe of dark brown bristle-like hairs, .003-.0035' long; spores pale flesh-color in the mass, oblong, slightly curved, .0003'-.00035'x.000125, with a slender, oblique, bristle-like hair, about as long as the spore itself, projecting from each end, and a shorter one from near the middle of the convex side, and often another extending in an opposite direction from the middle of the concave side. Sometimes two hairs project from the convex side of the spore.

On decaying culms and leaves of various grasses, June.

VOLUTELLA COMATA.—Receptacle disciform, orbicular, .0017'-.002' in diameter, attached by a central point and easily separating from the matrix; margin fringed with slender, septate, minutely-roughened, slender-pointed hairs; mass of spores flesh-colored, and convex when fresh; spores fusiform, .0005'-.00035' long. Differs from *V. ciliata*, Berk., in its larger spores.

On fallen petioles of *Robinia*, June.

Unless otherwise stated, the above-described species were collected at Newfield, N. J.

Fern Notes. III.

By GEO. E. DAVENPORT.

Asplenium ebenoides in *New York State*.—The discovery of this rare fern near Poughkeepsie was recorded by Mr. Clarence Lown in the BULLETIN for September, 1880. Mr. Lown, in company with

Mr. Henry Booth, has now had the good fortune to find another plant of the same species in the limestone region of Saugerties, in Ulster County.

The plant was found on the 15th of November, 1881, *growing in a clump of Camptosorus*.

Mr. Lown writes that the limestone-loving ferns *Asplenium Rutamuraria* and *Pellaea atropurpurea* were plentiful in the vicinity, but that there was no *ebeneum* nearer than fifteen feet. That distance, however, is plenty near enough (as, indeed, a much greater distance would be), to admit of the intermixture of spores, and consequent hybridization, if to that source the origin of *ebenoides* is really to be attributed.

In the specimens previously recorded, Mr. Lown described the venation as being more or less anastomose. This is the case in the frond which I received from Mr. Lown at that time, and also in at least one of my specimens from Alabama; but in the present plant the venation is everywhere free, while the plant itself looks very much like a form of *A. pinnatifidum* (a species not yet, but which ought to be, found within the limits of New York State) with black stipites, the tips of the fronds being less prolonged than usual.

It is to be hoped that some one, with means and opportunities for investigation, will yet be able to settle the question of this fern's origin; for, while the evidence is strongly in favor of the hybrid theory, it is by no means conclusive.

In view of the possibility of such an investigation the following points are presented here as having an important bearing upon the question:

1.—In every instance thus far, wherever *ebenoides* has been found, *Camptosorus* and *Asplenium ebeneum* have both been present.

2.—The affinity of certain characters possessed in common by *ebenoides* and *Camptosorus*—the prolonged, attenuated proliferous apices, anastomosing venation (BULLETIN *l. c.*), and now the significant position in which Mr. Lown found his last plant—point to *Camptosorus* as the mother plant; while, on the other hand, certain characters possessed in common by *ebenoides* and *Asplenium ebeneum*—the deeply pinnatifid, sometimes nearly, or quite pinnate (at least below) laminae, and ebeneous stipites—point to the latter species as the probable source from which hybridization proceeded: the inference from these facts, and the constant presence of *A. ebeneum* and *Camptosorus* being that the prothallus of some *Camptosorus* had become fertilized from the prothallus of an *ebeneum*, resulting in the production of a hybrid combining in itself the characters of both species.

3.—The extremely variable and irregular form of *ebenoides*—the often grotesque variation appearing as the result of two opposing internal elements struggling for the mastery—is exactly what might be expected from the hybridization of the two ferns mentioned.

Aspidium Filix-mas, Swz., in Arizona.—The discovery of *Cheilanthes tomentosa*, Link., *Aspidium patens*, Swz., and *Woodwardia radicans*, Smith, in Arizona, by Mr. C. G. Pringle, has already been recorded in the BULLETIN for August, 1881; I am now able to record

the additional discovery of *Gymnogramme triangularis*, Kaulf., and *Aspidium Filix-mas*, Swz., by the same indefatigable collector. The first was collected in April on the Santa Catalina, and the last on Mt. Washington, in the Santa Rita Mountains, in June, 1881.

This discovery of *A. Filix-mas* so near to California renders its presence in that State probable, and will encourage California botanists to search for it. Some forms of *A. rigidum*, var. *argutum* run very near to, and have frequently been mistaken for it, but no authentic specimens have as yet been received from California.

The species is most readily distinguished from *argutum* by the character of the serrated margins, these *never being spinulose* as in the latter species, which resembles *A. spinulosum* in this respect more than it does *Filix-mas*.

The under surface is usually more chaffy in *Filix-mas* than in *argutum*, the laminae narrower below, and the scales at the base of the stipes more or less ciliate-toothed, as pointed out by Prof. Eaton in his splendid work on our North American Ferns.

Mr. Pringle has also collected in Arizona, besides the ferns already mentioned, *Notholaena Grayi*, *N. Lemmoni*, *Gymnogramme hispida*, a very pubescent form of *Pellaea atropurpurea*, *Cheilanthes Lindheimeri*, *C. Fendleri*, *C. Eatonii*, and others,* while among his ferns from Oregon and California are *Polypodium falcatum*, very large forms of *P. Scouleri*, *Phegopteris alpestris* and *Aspidium Mohrioides*.

The excellence of Mr. Pringle's collections is now too well known to need any special commendation. He will probably make some arrangement before returning to the Pacific Coast (being at Charlotte, Vermont, at present) by which those who may desire sets of his ferns can obtain them.

An unusual form of Asplenium ebeneum.—From Miss Kate Furbish, of Brunswick, Me., comes a very interesting form of this species, one frond, measuring about 12 inches in length by 2 in breadth across the middle, and having unusually narrow, deeply-serrated pinnae, 1 inch long, less than $\frac{1}{2}$ of an inch in breadth at the base, broadening to about 3 lines at the centre where they are still more deeply serrated, the lobes again serrated, and then tapering gradually into an acute tip. The pinnae are obliquely set to the rachis, and some of them lose their auricled bases altogether.

The specimen is apparently one of those variations which are not likely to occur twice upon the same plant, and it does not, therefore, seem worth while to give it a name. Miss Furbish is rendering a splendid service to the Maine flora by a series of admirably executed and accurate analytical illustrations from nature, intended to include

* Mr. Pringle also collected, early in 1881, a few specimens of the *Woodsia* which Prof. Eaton has referred to *W. Mexicana*. Later, Mr. Lemmon sent the same fern to me with the name *W. Plummerae* attached, with a request that I should describe and publish it. This I declined to do. If now the fern which he has published as a new species in the *Botanical Gazette* under that name is the same plant, then it is to be seriously challenged, and I do not believe it will stand. The same *Woodsia* had previously been collected by Mr. Rusby, Mrs. Bagg, Dr. Palmer and Dr. Parry.

the entire flora of the State. It is to be hoped that she will not only be able to complete her "labor of love" but that it may some day be placed where it will remain as a monument to her untiring industry and love for the wild plants of her native State.

Abnormal Botrychium matricariaefolium.—While looking over some duplicates recently I came across a specimen of this fern with a fertile branch growing out from the stipes about 1 inch from its base. The branch had grown out in such a manner as to cause the stipes to diverge from its proper perpendicular course, and to form a curve which gave it the appearance of being forked.

Medford, Mass., Jan. 12th. 1882.

Large Grape-Vines.—In the January BULLETIN, Prof. Bessey gives the measurement of a grape-vine in Wayne Co., Ohio, (supposed to be *V. Labrusca*) of thirty-seven inches in circumference at four feet from the ground. In March last, whilst in Darien, Ga., I rode out to Baisden's Bluff on the coast, some twelve miles N. E. of Darien to see a celebrated grape-vine. It was just in leaf, but from the wood and bark I judged it to be *V. aestivalis*. It grew near to (touching) a large water-oak, and the large trunks clambered up to the top of the tree. I measured it at eight feet from the ground, and found it forty-four inches in circumference. I also measured, in the streets of Darien, two large live oaks, one giving a circumference of twenty-one feet, at three feet from the ground, and the other, eighteen feet at the same distance. I also measured two trees of *Melia azedarach* (pride of India) one eleven and a half feet, the other nine and a half feet, both taken about three feet from the ground. This exotic is a fast grower but the large size proves that this tree must have been introduced in the early settlement of the State.

Aiken, S C.

H. W. RAVENEL.

Notes on the Flora of Newport, R. I.—During the past season I have found a few interesting plants at Newport, R. I. A small patch of *Rhinanthus Crista-galli* grows in a swamp about a mile S. W. of the city. It was probably introduced here.

Epilobium hirsutum, L., is not uncommon in waste ground surrounding dwellings.

Genista tinctoria, L., occurs sparingly on some rocky hills, and *Trifolium hybridum*, L., in fields near the sea-shore. *Iris Virginica*, L., grows abundantly in swamps. *Alopecurus geniculatus*, L., and *Leontodon autumnale*, L., are found everywhere. *Hydrocotyle umbellata*, L., grows in shallow water on the border of Lily Pond. *Bromus mollis*, L., is found in great abundance in a piece of ground near Bellevue Avenue. It grows in such profusion that at a distance it might be taken for a field of grain. The following species also occur here: *Potentilla anserina*, L., *Glyceria acutiflora*, Torr., *Phalaris Canariensis*, L., *Bromus tectorum*, L., *Galinsoga parviflora*, Cav., *Centaurea nigra*, L., *Clethra alnifolia*, L., *Euphorbia Peplus*, L., *Triglochin maritimum*, L., *Arethusa bulbosa*, L., *Habenaria lacera*,